


FORM PTO-1100 (REV. 12-2001)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTORNEY'S DOCKET NUMBER BRI-00061	
TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371				U.S. APPLICATION NO. (if known, see 37 CFR 1.5)	
				10/088318	
INTERNATIONAL APPLICATION NO. PCT/AU00/01100		INTERNATIONAL FILING DATE 15 September 2000		PRIORITY DATE CLAIMED 15 September 1999	
TITLE OF INVENTION A MIRROR MOUNTING ASSEMBLY FOR CONTROLLING VIBRATION OF A MIRROR					
APPLICANT(S) FOR DO/EO/US Andrew G. S. Munyard, et al.					
Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:					
<p>1. <input checked="" type="checkbox"/> This is a FIRST submission of items concerning a filing under 35 U.S.C. 371.</p> <p>2. <input type="checkbox"/> This is a SECOND or SUBSEQUENT submission of items concerning a filing under 35 U.S.C. 371.</p> <p>3. <input type="checkbox"/> This is an express request to begin national examination procedures (35 U.S.C. 371(f)). The submission must include items (5), (6), (9) and (21) indicated below.</p> <p>4. <input checked="" type="checkbox"/> The US has been elected by the expiration of 19 months from the priority date (Article 31).</p> <p>5. <input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371(c)(2))</p> <p>a. <input checked="" type="checkbox"/> is attached hereto (required only if not communicated by the International Bureau).</p> <p>b. <input type="checkbox"/> has been communicated by the International Bureau.</p> <p>c. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US).</p> <p>6. <input type="checkbox"/> An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)).</p> <p>a. <input type="checkbox"/> is attached hereto.</p> <p>b. <input type="checkbox"/> has been previously submitted under 35 U.S.C. 154(d)(4).</p> <p>7. <input checked="" type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))</p> <p>a. <input type="checkbox"/> are attached hereto (required only if not communicated by the International Bureau).</p> <p>b. <input type="checkbox"/> have been communicated by the International Bureau.</p> <p>c. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired.</p> <p>d. <input checked="" type="checkbox"/> have not been made and will not be made.</p> <p>8. <input type="checkbox"/> An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371 (c)(3)).</p> <p>9. <input checked="" type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).</p> <p>10. <input type="checkbox"/> An English language translation of the annexes of the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).</p> <p>Items 11 to 20 below concern document(s) or information included:</p> <p>11. <input type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98.</p> <p>12. <input checked="" type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.</p> <p>13. <input checked="" type="checkbox"/> A FIRST preliminary amendment.</p> <p>14. <input type="checkbox"/> A SECOND or SUBSEQUENT preliminary amendment.</p> <p>15. <input type="checkbox"/> A substitute specification.</p> <p>16. <input type="checkbox"/> A change of power of attorney and/or address letter.</p> <p>17. <input type="checkbox"/> A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 35 U.S.C. 1.821 - 1.825.</p> <p>18. <input type="checkbox"/> A second copy of the published international application under 35 U.S.C. 154(d)(4).</p> <p>19. <input type="checkbox"/> A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4).</p> <p>20. <input checked="" type="checkbox"/> Other items or information: Copy of the Patent Application and Drawings (International Application Published Under the Patent Cooperation Treaty) Express Mailing Certificate No. EU 065 973 460 US Return Receipt Postcard</p>					

U.S. APPLICATION NO. 10/088318	INTERNATIONAL APPLICATION NO. PCT/AU00/01100	ATTORNEY'S DOCKET NUMBER BRI-00061															
21 <input checked="" type="checkbox"/> The following fees are submitted: BASIC NATIONAL FEE (37 CFR 1.492 (a) (1) - (5)): Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO. \$1040.00 International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO \$890.00 International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO \$740.00 International preliminary examination fee (37 CFR 1.482) paid to USPTO but all claims did not satisfy provisions of PCT Article 33(1)-(4) \$710.00 International preliminary examination fee (37 CFR 1.482) paid to USPTO and all claims satisfied provisions of PCT Article 33(1)-(4) \$100.00 ENTER APPROPRIATE BASIC FEE AMOUNT =		CALCULATIONS PTO USE ONLY <table style="width: 100%;"> <tr> <td style="width: 80%;">\$ 1,040.00</td> <td style="width: 20%;"></td> </tr> </table>	\$ 1,040.00														
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Surcharge of \$130.00 for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(e)). \$		\$															
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 20%;">CLAIMS</th> <th style="width: 20%;">NUMBER FILED</th> <th style="width: 20%;">NUMBER EXTRA</th> <th style="width: 20%;">RATE</th> <th style="width: 20%;">\$</th> </tr> </thead> <tbody> <tr> <td>Total claims</td> <td>21 - 20 =</td> <td>1</td> <td>x \$18.00</td> <td>\$ 18.00</td> </tr> <tr> <td>Independent claims</td> <td>2 - 3 =</td> <td>0</td> <td>x \$84.00</td> <td>\$</td> </tr> </tbody> </table>	CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE	\$	Total claims	21 - 20 =	1	x \$18.00	\$ 18.00	Independent claims	2 - 3 =	0	x \$84.00	\$	\$	\$
CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE	\$													
Total claims	21 - 20 =	1	x \$18.00	\$ 18.00													
Independent claims	2 - 3 =	0	x \$84.00	\$													
MULTIPLE DEPENDENT CLAIM(S) (if applicable) + \$280.00		\$															
TOTAL OF ABOVE CALCULATIONS =		\$ 1,058.00															
<input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are reduced by 1/2.		\$															
SUBTOTAL =		\$ 1,058.00															
Processing fee of \$130.00 for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(f)).		\$															
TOTAL NATIONAL FEE =		\$ 1,058.00															
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property +		\$ 40.00															
TOTAL FEES ENCLOSED =		\$ 1,098.00															
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a. <input type="checkbox"/> A check in the amount of \$ _____ to cover the above fees is enclosed. b. <input checked="" type="checkbox"/> Please charge my Deposit Account No. <u>500906</u> in the amount of \$ <u>1,098.00</u> to cover the above fees. A duplicate copy of this sheet is enclosed. c. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. <u>500906</u> . A duplicate copy of this sheet is enclosed. d. <input type="checkbox"/> Fees are to be charged to a credit card. WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.																	
NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137 (a) or (b)) must be filed and granted to restore the application to pending status.																	
SEND ALL CORRESPONDENCE TO: Philip R. Warn Warn, Burgess & Hoffmann, P.C. 691 North Squirrel Road Suite B125 Auburn Hills, MI 48326 Phone: (248) 364-4300																	
SIGNATURE  Philip R. Warn NAME 32775 REGISTRATION NUMBER		\$															

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the National Phase Application in the United States
of International Patent Application No. PCT/AU00/0110
Filed September 15, 2000

Application No.: Not assigned yet

Filing Date: Not assigned yet

Applicant: Munyard et al.

Group Art Unit: Not assigned yet

Examiner: Not assigned yet

Title: A MIRROR MOUNTING ASSEMBLY FOR
CONTROLLING VIBRATION OF A MIRROR

Attorney Docket: BRI-00061

PRELIMINARY AMENDMENT

Commissioner of Patents & Trademarks
Washington, D.C. 20231

Sir:

Prior to examination of the present application, please consider the following.

Please amend the above-identified application as follows.

IN THE SPECIFICATION

The specification has been rewritten as follows:

On page 1, the first full paragraph has been rewritten as follows:

This invention relates to a mirror mounting assembly, and in particular to a mirror mounting assembly for mounting an adjustable mirror in a manner that will control undesirable vibration or movement of the mirror.

In the Brief Description of the Invention section, on Page 2, the first full paragraph has been rewritten as follows:

In its broadest form, the invention is a mirror mounting assembly for preventing unwanted movement of said mirror comprising a mirror support for holding a mirror, a base portion, a pivoting joint between said mirror support and said base portion that allows said mirror support to pivot with respect to said base portion, a link extending between said mirror support and said base, a first end of said link held with respect to either said mirror support or said base portion, and an aperture in either said mirror support or said base into which the second end of said link locates, there being a tight sliding fit between said aperture and said link which allows said link to move through said aperture so that said mirror support may be adjusted with respect to said base, but which acts to prevent unwanted movement of said mirror support during normal use.

On Page 8, the last paragraph has been rewritten as follows:

The invention provides an assembly that is component and easy to manufacture while not requiring close tolerances to ensure proper function of the mounting assembly 10.

On Page 9, the first line has been rewritten as follows:

What is claimed is:

After the claims, the following text has been inserted:

Abstract

A mirror mounting assembly including a mirror support, a base portion, a pivoting joint between the support and the base portion allowing the support to pivot with respect to the base portion, a link extending between the support and the base portion, a first end of the link being held with respect to either the support or the base portion, an aperture provided in the support or the base portion into which the second end of the link locates, a tight sliding fit between the aperture and the link, the link moving through

the aperture allowing the support to be adjusted with respect to the base portion, the fit being such that unwanted movement between the support and base portion is prevented during normal use.

IN THE CLAIMS

The claims have been rewritten as follows:

1. (Amended) A mirror mounting assembly for preventing unwanted movement of said mirror comprising:

a mirror support for holding a mirror,

a base portion,

a pivoting joint between said mirror support and said base portion that allows said mirror support to pivot with respect to said base portion,

a link extending between said mirror support and said base, a first end of said link held with respect to either said mirror support or said base portion, and

an aperture in either said mirror support or said base into which the second end of said link locates, there being a tight sliding fit between said aperture and said link which allows said link to move through said aperture so that said mirror support may be adjusted with respect to said base, but which acts to prevent unwanted movement of said mirror support during normal use.

8. (Amended) A mirror mounting assembly according to claim 1 wherein said aperture comprises a pair of walls where one of said walls is movable and further comprising a force member so that said wall is resiliently movable.

10. (Amended) A mirror mounting assembly according to claim 9 wherein said force member comprises a spring.

11. (Amended) A mirror mounting assembly according to claim 1 wherein said aperture comprises a pair of movable walls and further comprising a force member

to allow resilient movement of said walls.

13. (Amended) A mirror mounting assembly according to claim 12 wherein said force member comprises a spring.

14. (Amended) A mirror mounting assembly according to claim 8 wherein said link comprises a flat elongate member.

16. (Amended) A mirror mounting assembly for preventing unwanted movement of said mirror comprising:

a mirror support for holding a mirror,

a base portion,

a pivoting joint between said mirror support and said base portion that allows said mirror support to pivot with respect to said base portion,

a pair of links extending between said mirror support and said base, a first end of each said link held with respect to either said mirror support or said base portion, and

a pair of apertures in either said mirror support or said base into which the second ends of said links locate, there being a tight sliding fit between said apertures and said links which allows said links to move through said apertures so that said mirror support may be adjusted with respect to said base, but which act to prevent unwanted movement of said mirror support during normal use.

17. (Amended) A mirror mounting assembly according to claim 16 wherein each said aperture comprises a pair of walls, one of said walls of each said aperture being movable and further comprising a force member applied to each said movable wall so that they are resiliently movable.

18. (Amended) A mirror mounting means according to claim 17 wherein said force member comprises a spring placed between said movable walls.

Claim 22 has been canceled, without prejudice.

REMARKS

Claims 1, 8, 10, 11, 13, 14, 16, 17, and 18 have been amended. Support for these amendments can be found throughout the specification and drawings, as originally filed.

Claim 22 has been canceled, without prejudice.

The specification has been amended to correct minor typographical, grammatical and syntax errors. The Applicants aver that no new matter has been added to the instant application.

Additionally, the Applicants have provided an Abstract section to the instant application. A separate sheet containing the Abstract is submitted herewith. The Applicants aver that no new matter has been added to the instant application.

The Applicants respectfully request entry of the above amendments. The Applicants submit that no new matter has been added. The Applicants respectfully submit that the application is in condition for substantive examination, and such examination is respectfully requested.

Respectfully submitted,

WARN, BURGESS & HOFFMANN, P.C.
Attorneys for Applicants

By: 

Preston H. Smirman
Reg. No. 35,365
Philip R. Warn
Reg. No. 32,775

P.O. Box 70098
Rochester Hills, MI 48307
(248) 364-4300

Dated: 3/14/02

PRW/PHS/phs

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION

On page 1, the first full paragraph has been rewritten as follows:

This invention relates to a mirror mounting assembly, and in particular to a [means of] mirror mounting assembly for mounting an adjustable mirror in a manner that will control undesirable vibration or movement of the mirror.

In the Brief Description of the Invention section, on Page 2, the first full paragraph has been rewritten as follows:

In its broadest form, the invention is a mirror mounting assembly [having improved means] for preventing unwanted movement of said mirror comprising a mirror support for holding a mirror, a base portion, a pivoting joint between said mirror support and said base portion that allows said mirror support to pivot with respect to said base portion, a link extending between said mirror support and said base, a first end of said link held with respect to either said mirror support or said base portion, and an aperture in either said mirror support or said base into which the second end of said link locates, there being a tight sliding fit between said aperture and said link which allows said link to move through said aperture so that said mirror support may be adjusted with respect to said base, but which acts to prevent unwanted movement of said mirror support during normal use.

On Page 8, the last paragraph has been rewritten as follows:

The invention provides [a means which] an assembly that is component and easy to manufacture while not requiring close tolerances to ensure proper function of the mounting assembly 10.

On Page 9, the first line has been rewritten as follows:

[THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS] What is claimed is:

IN THE CLAIMS

The claims have been rewritten as follows:

1. (Amended) A mirror mounting assembly [having improved means] for preventing unwanted movement of said mirror comprising:

a mirror support for holding a mirror,

a base portion,

a pivoting joint between said mirror support and said base portion that allows said mirror support to pivot with respect to said base portion,

a link extending between said mirror support and said base, a first end of said link held with respect to either said mirror support or said base portion, and

an aperture in either said mirror support or said base into which the second end of said link locates, there being a tight sliding fit between said aperture and said link which allows said link to move through said aperture so that said mirror support may be adjusted with respect to said base, but which acts to prevent unwanted movement of said mirror support during normal use.

8. (Amended) A mirror mounting assembly according to claim 1 wherein said aperture comprises a pair of walls where one of said walls is movable and further comprising a force [means] member so that said wall is resiliently movable.

10. (Amended) A mirror mounting assembly according to claim 9 wherein said force [means] member comprises a spring.

11. (Amended) A mirror mounting assembly according to claim 1 wherein said aperture comprises a pair of movable walls and further comprising a force [means] member to allow resilient movement of said walls.

13. (Amended) A mirror mounting assembly according to claim 12 wherein said force [means] member comprises a spring.

14. (Amended) A mirror mounting assembly according to [any one of claims] claim 8 or 11 wherein said link comprises a flat elongate member.

16. (Amended) A mirror mounting assembly [having improved means] for preventing unwanted movement of said mirror comprising:

a mirror support for holding a mirror,

a base portion,

a pivoting joint between said mirror support and said base portion that allows said mirror support to pivot with respect to said base portion,

a pair of links extending between said mirror support and said base, a first end of each said link held with respect to either said mirror support or said base portion, and

a pair of apertures in either said mirror support or said base into which the second ends of said links locate, there being a tight sliding fit between said apertures and said links which allows said links to move through said apertures so that said mirror support may be adjusted with respect to said base, but which act to prevent unwanted movement of said mirror support during normal use.

17. (Amended) A mirror mounting assembly according to claim 16 wherein each said aperture comprises a pair of walls, one of said walls of each said aperture being movable and further comprising a force [means] member applied to each said movable wall so that they are resiliently movable.

18. (Amended) A mirror mounting means according to claim 17 wherein said force [means] member comprises a spring placed between said movable walls.

Claim 22 has been canceled, without prejudice.

Abstract

A mirror mounting assembly including a mirror support, a base portion, a pivoting joint between the support and the base portion allowing the support to pivot with respect to the base portion, a link extending between the support and the base portion, a first end of the link being held with respect to either the support or the base portion, an aperture provided in the support or the base portion into which the second end of the link locates, a tight sliding fit between the aperture and the link, the link moving through the aperture allowing the support to be adjusted with respect to the base portion, the fit being such that unwanted movement between the support and base portion is prevented during normal use.

A MIRROR MOUNTING ASSEMBLY FOR CONTROLLING
VIBRATION OF A MIRROR

This invention relates to a mirror mounting assembly, and in particular to a means of mounting an adjustable mirror in a manner that will control undesirable vibration or movement of the mirror.

Background of Invention

It is common for rear vision mirrors, particularly those mounted externally of a vehicle to be adjustable about two orthogonal axes. This adjustment can be by remote, manual or electric means, or by directly adjusting the mirror by hand.

Rear vision mirrors normally comprise a mirror body or shell with a mirror located in the shell. A base is separately mounted within the shell and a mirror support is pivotally attached to the base. This allows movement of the mirror support and the attached mirror about the adjustment axes. The base may also be part of the mirror body or shell moulding.

One principal aim is to minimise unwanted vibration or movement of the mirror support with respect to the base portion. Vibration should be minimised regardless of the position to which the mirror support is moved. Ideally, the mirror support should be easily moved to the required position, and once in that position, it should not vibrate or move as a result of forces that would be applied to the mirror during normal use of a vehicle.

Examples of mirror support assemblies incorporating movement prevention devices is shown in US Patent No 4826305 and International Patent Application No WO 99/00272. Both of the mirror mounts shown in these patent specifications use friction engagement between two surfaces. However, in order to make both arrangements work, a high degree of precision is required in both moulding and

mounting of the components, and the arrangements are subject to failure over a period of time as a result of reduced friction as the engagement surfaces wear.

It is an aim of this invention to provide an improved mirror mounting assembly which prevents undesirable vibration and movement of the mirror.

Brief Description of the Invention

In its broadest form, the invention is a mirror mounting assembly having improved means for preventing unwanted movement of said mirror comprising a mirror support for holding a mirror, a base portion, a pivoting joint between said mirror support and said base portion that allows said mirror support to pivot with respect to said base portion, a link extending between said mirror support and said base, a first end of said link held with respect to either said mirror support or said base portion, and an aperture in either said mirror support or said base into which the second end of said link locates, there being a tight sliding fit between said aperture and said link which allows said link to move through said aperture so that said mirror support may be adjusted with respect to said base, but which acts to prevent unwanted movement of said mirror support during normal use.

Preferably, the mirror will be fixed in a conventional manner to a mirror support. Both the mirror support and base portion are preferably moulded from polymeric materials. However, other materials such as diecast metals may be equally suited.

Preferably the base portion is a separately moulded component which itself is then located in and fixed to the moulded shell of a wing rear vision mirror. Alternatively, the base may be integrally formed with other components such as the moulded shell.

Preferably, the pivoting joint allows movement of the mirror support about two orthogonal axes. However, the invention will be equally suited to mono axis mirrors where the mirror support may be adjusted about one axis only such as a vertical axis.

The pivoting joint may comprise a variety of mounts such as a ball and socket joint, or a flexible extension between the mirror support and base portion or a universal joint.

A link and the aperture into which the link locates is provided to restrain the undesirable movement, such as vibration, of the mirror support. The link extends between the mirror support and the base portion with one end of the link held with respect to either the mirror support or base portion. The other end of the link locates within an aperture on the respective component. The fit between the link and the aperture is tight but the link is able to slide within the aperture upon sufficient force being applied. This enables both movement of the mirror support as required and sufficient holding force to prevent undesirable movement.

The aperture may be shaped to match the cross-sectional shape of the link. The link may have a variety of cross-sectional shapes but preferably comprises either a circular cross-section or a rectangular cross-section. The aperture is matched accordingly, and the fit between the link and aperture provides the required resistance to movement so that the mirror support will not move when subject to normal road use forces. However, normal adjustment force will overcome the frictional holding force.

The aperture may also be formed between a pair of elements where one or both of the elements is moveable and has a spring force applied thereto. The link may be a flat elongate member which locates between the two elements so that a pincer force is applied to the link. The spring rate can be adjusted to provide adequate holding force while at the same time allowing movement of the link when adjustment of the

mirror plate is required. The pair of elements may comprise a pair of walls where one of the walls is hinged.

Preferably, the link is pivotally attached to a first end to either the mirror support or base portion. This may comprise a ball at the end of the link which locates within a socket. The socket may be sufficiently resilient to enable the ball to be pushed into place and thereby held. Alternatively, the first end of the link may also frictionally engage an aperture in the same manner with the second end of the link. In this case, each end of the link has an enlarged end to prevent disengagement from the apertures.

In this specification, the meaning of 'held' is meant to include the link remaining stationary with respect to either mirror support or base and moving with respect to the other.

The amount of force used to hold the link will be a balance between maximising the holding force to prevent unwanted movement while not exceeding the maximum force available or desired to be used to move the mirror support.

In most instances, the mirror support is adjusted about a generally horizontal and vertical axes. A link and aperture combination for each axis of movement is used. However, it will be possible to position a single link and aperture arrangement with a dual axis movement mirror to provide the required holding force for both axes of adjustment.

In order to fully understand the invention, preferred embodiments will be described, however it should be realised that the scope of the invention is not to be limited or confined to the features of these embodiments.

Brief Description of the Drawings

These embodiments are illustrated in accompanying drawings in which:

Figure 1 shows an "exploded" view of a mirror mounting assembly;

Figure 2 shows a bottom plan view of the mirror mounting assembly;

Figure 3 shows a cross-sectional view of the mirror mounting assembly about section line 3-3 shown in Figure 2; and

Figure 4 shows a perspective view of a second embodiment of the invention.

Detailed Description

Figures 1 to 3 show a first embodiment of the invention. The mirror mounting assembly 10 comprises a mirror support 11 and a base portion 12. The pivoting joint between the mirror support 11 and base portion 12 comprises a yoke 13 and spigot 14. The spigot 14 connects directly to the mirror support 11, and the yoke 13 is pivotally attached to the mirror support 11 and base portion 12 respectively. The yoke 13 prevents rotation of the mirror support 11 with respect to the base portion 12. This connection arrangement allows movement of the mirror support 11 with respect to the base portion 12 about two orthogonal axes.

The mirror support 11 is designed to have a mirror backing plate attached to it. The mirror backing plate holds the mirror. The base portion 12 is designed to be fixed to mirror body housing such as the shell of a wing mirror. The mirror mounting assembly 10 shown in this embodiment is designed to be manually adjusted.

In this embodiment, the links that extend between the mirror support 11 and base portion 12 comprise blades 17. Each of the blades 17 is of rectangular cross-section with a retaining ball 18 formed at one end. Each retaining ball 18 locates within a socket 19 on the mirror support 11. The blades 17 are retained on the mirror support 11 and able to pivot with respect to it.

Each of the blades 17 locates within apertures 20 in the base portion 12. The apertures 20 have a generally rectangular cross-section which is similar in dimensions to the cross-section of blades 17. The longer edges of the apertures 20 comprise a fixed wall 21 and a moveable wall 22 respectively. The fixed and moveable walls 21 and 22 each have a ridge 23 which provide the point of contact between the fixed and moveable walls 21 and 22 and the blades 17.

The movable walls 22 are integrally moulded with the base portion 12 and are connected thereto by a hinge line 24 that enables each of the moveable walls 22 to rotate about the hinge line 24. A compression spring 25 is located between the moveable walls 22 and acts to push the moveable walls 22 towards the fixed walls 21. The compression spring 25 applies the required force to the friction blades 17 via the moveable walls 22 when they are located within the apertures 20.

Preferably, the base portion 12 and the blades 17 are moulded from different polymeric materials. This prevents binding between the components which would occur if the same material were used.

In this embodiment, the blades 17 are made from a glass field polyester or nylon material. The base portion 12 is manufactured from acetal. These materials, together with the force applied by the compression spring 25, will enable the ridges 23 to have sufficient grip on the surfaces of the blades 17 to restrain unwanted movement.

In this first embodiment, a pair of blades 17 is used. Each of the blades 17 is positioned either side of the spigot 14 which provides an optimum rigidity for the mirror support 11. If the mirror support 11 is rotated about an axis passing through the spigot 14 which is parallel with the part line 3-3 shown in Figure 2, then both of the blades 17 will move either into or out of the apertures 20. If the mirror support 11 is rotated about a second axis parallel to the first, then one blade 17 will move into its

aperture 20 and the other will move out of its aperture 20. The length of the blades 17 are sufficient to cover the full range of movement of the mirror support 11.

The compression spring 25 provides a convenient means for adjusting the gripping force applied to the blades 17. The compression spring can be matched to provide the required gripping force which will prevent unwanted movement while at the same time still enabling manual movement of the mirror support 11.

Figure 4 shows a second embodiment of the invention. In this embodiment, a single blade 17 and corresponding aperture is used.

In this embodiment, the aperture is formed by a frame member 28 that has two opposing halves 29 and 30. Held between the opposing halves 29 and 30 are semi-cylindrical gripping pads 31. The blade 17 is inserted between the gripping pads 31.

The opposing halves 29 and 30 of the frame member 28 are connected by a pair of bands 33. The left side opposing half 29 is shown in dashed outline in Figure 4. This opposing half 29 is rotated towards the other opposing half 30 and are clipped together. In this embodiment, clip 34 locates over projection 35 so that the opposing halves 29 and 30 of the frame member 28 are held together. A clip member 34 and projection 35 are provided on either side of the frame member 28. This enables the opposing halves 29 and 30 to be held together prior to attachment within the base portion 12.

Each of the opposing halves 29 and 30 are provided with an elongate semi-circular recess. The gripping pads 31 locate within these recesses. The gripping pads 31 are held in place once the opposing halves 29 and 30 of the frame member 28 are clipped together.

The base portion 12 has a circular aperture 37 within which the frame member 28 locates. Each of the opposing halves 29 and 30 are provided with a flange 38 that each locate through the aperture 37 and extend over the upper surface of the base portion 12. Location of the blade 17 between the gripping pads 31 holds the opposing halves 29 and 30 apart and therefore prevent the frame member 28 disengaging from the aperture 37.

A spring 39 is held in a compressed state between a wall 40 and the opposing half 30 of the frame member 28. The other opposing half 29 of the frame member 28 abuts against a wall 41. This ensures that a compressive force is applied to the blade 17. This provides the necessary resistance to movement of the blade 17. As with the first embodiment, the compression spring can be matched to provide the required gripping force which will prevent unwanted movement while at the same time enabling movement of the mirror support 11.

The invention provides a means which is component and easy to manufacture while not requiring close tolerances to ensure proper function of the mounting assembly 10.

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A mirror mounting assembly having improved means for preventing unwanted movement of said mirror comprising:
 - a mirror support for holding a mirror,
 - a base portion,
 - a pivoting joint between said mirror support and said base portion that allows said mirror support to pivot with respect to said base portion,
 - a link extending between said mirror support and said base, a first end of said link held with respect to either said mirror support or said base portion, and
 - an aperture in either said mirror support or said base into which the second end of said link locates, there being a tight sliding fit between said aperture and said link which allows said link to move through said aperture so that said mirror support may be adjusted with respect to said base, but which acts to prevent unwanted movement of said mirror support during normal use.
2. A mirror mounting assembly according to claim 1 wherein said link is pivotally attached to said mirror support.
3. A mirror mounting assembly according to claim 2 where said first end of said link comprises a ball, said mirror support further comprising a socket within which said ball locates.
4. A mirror mounting assembly according to claim 1 wherein said aperture comprises a pair of walls, one of said walls being resiliently movable.
5. A mirror mounting assembly according to claim 4 wherein said link comprises a flat elongate member.
6. A mirror mounting assembly according to claim 5 wherein said link has a generally rectangular cross-section.

7. A mirror mounting assembly according to claim 4 further comprising a spring applying force to one of said walls.
8. A mirror mounting assembly according to claim 1 wherein said aperture comprises a pair of walls where one of said walls is movable and further comprising a force means so that said wall is resiliently movable.
9. A mirror mounting assembly according to claim 8 wherein said one wall is hinged to said base portion.
10. A mirror mounting assembly according to claim 9 wherein said force means comprises a spring.
11. A mirror mounting assembly according to claim 1 wherein said aperture comprises a pair of movable walls and further comprising a force means to allow resilient movement of said walls.
12. A mirror mounting assembly according to claim 11 wherein said walls are held together by a frame where said frame is attachable to said base portion.
13. A mirror mounting assembly according to claim 12 wherein said force means comprises a spring.
14. A mirror mounting assembly according to any one of claims 8 or 11 wherein said link comprises a flat elongate member.
15. A mirror mounting assembly according to claim 13 wherein said link has a generally rectangular shape.

16. A mirror mounting assembly having improved means for preventing unwanted movement of said mirror comprising:

a mirror support for holding a mirror,

a base portion,

a pivoting joint between said mirror support and said base portion that allows said mirror support to pivot with respect to said base portion,

a pair of links extending between said mirror support and said base, a first end of each said link held with respect to either said mirror support or said base portion, and

a pair of apertures in either said mirror support or said base into which the second ends of said links locate, there being a tight sliding fit between said apertures and said links which allows said links to move through said apertures so that said mirror support may be adjusted with respect to said base, but which act to prevent unwanted movement of said mirror support during normal use.

17. A mirror mounting assembly according to claim 16 wherein each said aperture comprises a pair of walls, one of said walls of each said aperture being movable and further comprising a force means applied to each said movable wall so that they are resiliently movable.

18. A mirror mounting means according to claim 17 wherein said force means comprises a spring placed between said movable walls.

19. A mirror mounting means according to claim 18 wherein said movable walls are hinged to said base portion.

20. A mirror mounting means according to claim 17 wherein said links comprise flat elongate members with a generally rectangular cross-section.

21. A mirror mounting means according to claim 17 wherein each said pair of walls is held together by a frame where said frame is attachable to said base portion.
22. A mirror mounting means as hereinbefore described with reference to and as illustrated in the accompanying drawings.

201208230801

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
22 March 2001 (22.03.2001)

PCT

(10) International Publication Number
WO 01/19645 A1

(51) International Patent Classification: B60R 1/06, 1/02

(72) Inventors; and

(21) International Application Number: PCT/AU00/01100

(75) Inventors/Applicants (for US only): MUNYARD, Andrew, Gordon, Stuart [AU/AU]; Sherriffs Road, Lonsdale, S.A. 5160 (AU). FIMERI, Gary, Gordon [AU/AU]; Sherriffs Road, Lonsdale, S.A. 5160 (AU).

(22) International Filing Date:
15 September 2000 (15.09.2000)

(74) Agent: MADDERN; Level 1, 64 Hindmarsh Square, Adelaide, S.A. 5000 (AU).

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
PQ 2834 15 September 1999 (15.09.1999) AU

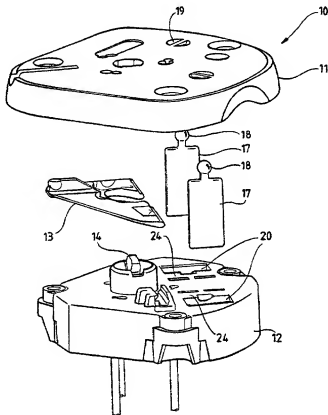
(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(71) Applicant (for all designated States except US): BRITAX RAINSFORDS PTY LTD [AU/AU]; Sherriffs Road, Lonsdale, S.A. 5160 (AU).

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE,

[Continued on next page]

(54) Title: A MIRROR MOUNTING ASSEMBLY FOR CONTROLLING VIBRATION OF A MIRROR



(57) Abstract: A mirror mounting assembly (10) comprising a mirror support (11), a base portion (12), a pivoting joint (13, 14) between the support (11) and the base portion (12), a pivoting joint (13, 14) between the support (11) and the base portion (12) allowing the support (11) to pivot with respect to the base portion (12), a link (17) extending between the support (11) and the base portion (12), a first end of the link (17) being held with respect to either the support (11) or the base portion (12), an aperture (20) provided in the support (11) or the base portion (12) into which the second end of the link (17) locates, a tight sliding fit between the aperture (20) and the link (17), the link (17) moving through the aperture (20) allowing to support (11) to be adjusted with respect to the base portion (12), the fit being such that unwanted movement between the support (11) and base portion (12) is prevented during normal use.

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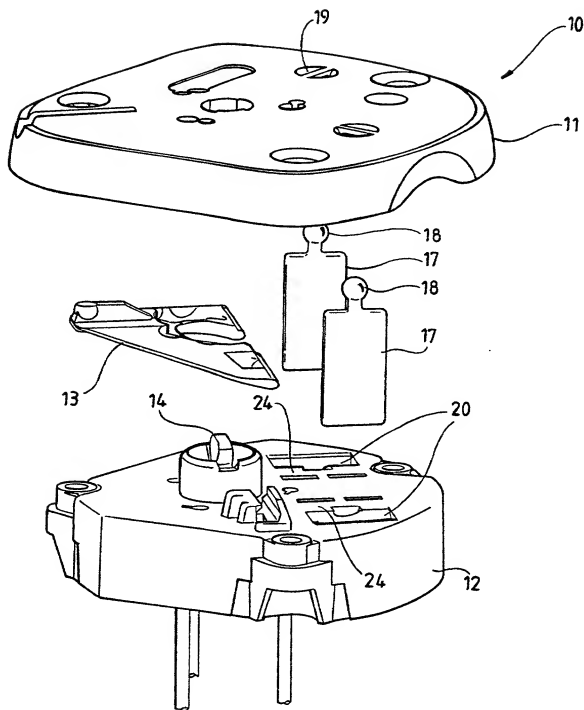
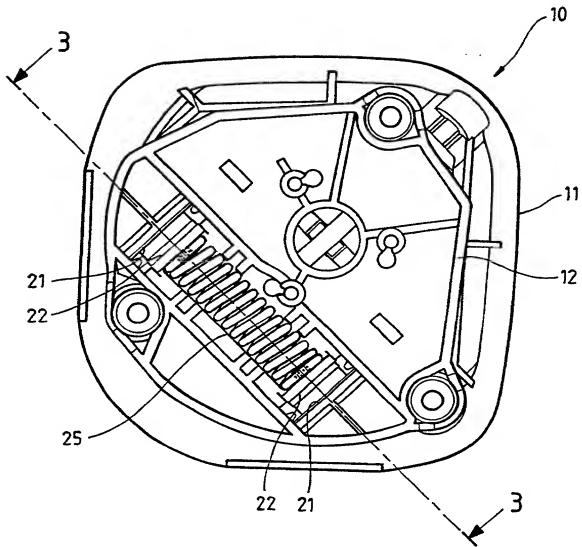


Fig 1

**Fig 2**

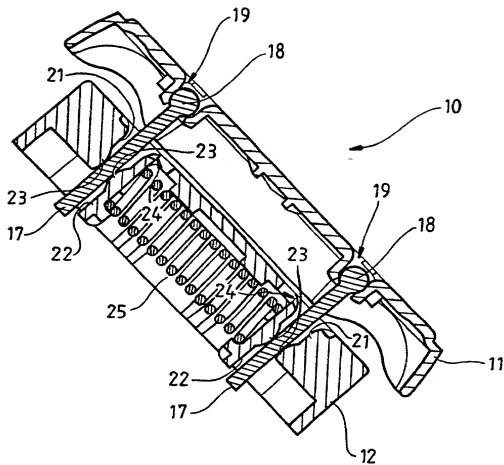


Fig 3

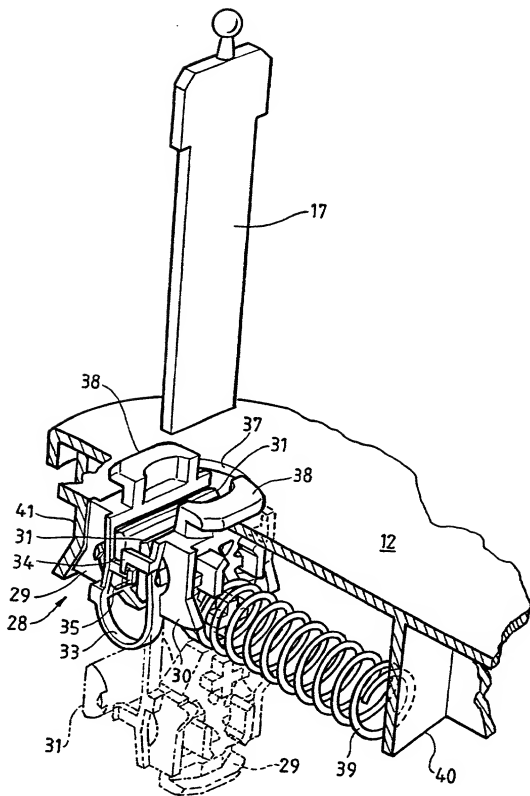


Fig 4

USA

Attorney's Docket No: BRI-00061**COMBINED DECLARATION/POWER OF ATTORNEY**

AS BELOW NAMED INVENTOR, I HEREBY DECLARE THAT: This Declaration is of the following type:

_____ Original _____ Supplemental _____ Continuation-In-Part
_____ Divisional _____ Continuation X National Stage of PCT

My residence, post office address and citizenship are below next to my name; I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled: "A MIRROR MOUNTING ASSEMBLY FOR CONTROLLING VIBRATION OF A MIRROR" the specification of which:

_____ is attached hereto
_____ was filed on X , as Serial No X
_____ was amended on X (if applicable)
 X was described and claimed in PCT International Application No
PCT/AU00/01100 filed on 15 September 2000

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above. I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, Sec. 1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, Sec.119 of the foreign application(s) for patent or inventor's certificate or of any PCT International application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America files by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed:

Country	Appln No.	Day/Month/Year/Filed	Priority Claimed Yes No
Australia	PQ 2834	15 September 1999	Yes

I hereby appoint the following attorneys and/or agents to prosecute this application and to transact all business in the U.S. Patent and Trademark Office connected with:

Philip R Warn
Warn Burgess & Hoffmann PC
691 North Squirrel Road
Suite B125
Auburn Hills
MICHIGAN 48326
UNITED STATES OF AMERICA


I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issue therefrom.

ANDREW GORDON STUART MONTAUDO *A.G.S. Montaud.* 11-2-2002
Full name of sole or first inventor Inventor's signature Date

Residence	52 GUDFREY TCE, LEHBRIDGE, SOGS, AUSTRALIA	AUSTRALIAN
		Citizenship

AS ABOVE
Post Office Address

GARRY GORDON LESLIE FINE
Full name of second joint inventor if any


Inventor's signature

5-2-2002
Date

22 GOLFLANDS VIEW, MORPHETT VALE 5162 AUSTRALIA
Residence

AUSTRALIAN
Citizenship

AS ABOVE

Post Office Address